

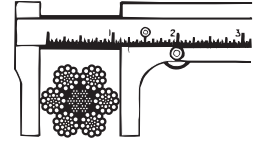
WHEN TO REPLACE YOUR ROPES

According to the *ASME B30.30 Ropes* standard, there are no precise rules to determine the exact time to remove and replace rope because so many variables are involved. However, once a rope reaches any one of the specified removal criteria, it must be replaced before the equipment on which it is used is placed back in service.

The following are the required, established removal criteria for steel ropes. Refer to *ASME B30.30 Ropes* for details on the requirements for inspection and removal criteria.

DIAMETER REDUCTION

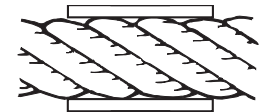
Remove when the measured diameter has decreased more than 5% below nominal diameter at any location along the rope's entire length.



Always measure the largest dimension when measuring your rope.

DISTORTION OF ROPE STRUCTURE

Remove any rope with evidence of kinking, crushing where the minimum dimension across the distorted section is $5/6$ of the nominal diameter or less, birdcaging, severe doglegs, core protrusions, or any other damage resulting in permanent distortion of the rope structure.



Proper method of measuring ropes with odd number of outer strands, using caliper with plates.

CORROSION

Remove when widespread or localized corrosion is present as evidenced by surface pitting, magnetic debris coming from the valleys, or any other obvious signs indicating significant rope degradation due to corrosion conditions.

WAVINESS (CORKSCREW EFFECT)

Remove when a wave's overall envelop diameter has increased to a value greater than 110% of the nominal diameter of the rope.

HEAT DAMAGE

Remove due to any apparent damage from any heat source, such as welding, power line strikes, or lightning strikes.

HIGH OR LOW STRAND

Remove when a strand is higher or lower than half of the strand's diameter above or below the surface of the rope.

END TERMINATIONS

Remove due to severely corroded, cracked, deformed, worn, grossly damaged, or improperly installed end terminations.

VISIBLE BROKEN WIRES

The following table applies to all ASME B30 load handling equipment using steel wire rope.

Rope	Over 6 rope diameters		Over 30 rope diameters		At end terminations
	In a single strand	In all strands	In all strands	Valley breaks	
Running rope					
≤ 6 strands, 19 class	3	6	12	2	2
> 6 strands, 19 class	4	8	16	2	2
≤ 6 strands, 36 class	5	10	20	2	2
> 6 strands, 36 class	6	12	24	2	2
Category 1 rotation-resistant	x	6	12	2	2
Category 2 rotation-resistant	x	2	4	2	2
Category 3 rotation-resistant	x	2	4	2	2
Standing					
All	x	3	x	x	2

WHAT ABOUT IDLE ROPES?

Wire rope that has been idle for a period of 1 month to 6 months due to shutdown or storage of the machine are subject to the Frequent inspection requirements as outlined by *ASME B30.30 Ropes*. Refer to that document for details.

Wire rope that has been idle for a period of over 6 months due to shutdown or storage of the machine are subject to the Periodic inspection requirements as outlined by *ASME B30.30 Ropes*. Refer to that document for details.

WHAT REPLACEMENT ROPE TO USE

Your replacement rope must have a minimum breaking force at least as great as the original rope furnished or recommended by the crane manufacturer. Any deviation from the original size, grade, type, or construction must be specified by the wire rope manufacturer, crane manufacturer or a qualified person.